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ABSTRACT

A survey of over 200 academic, public, and special libraries in 13 selected states was conducted in the fall of 1979 to provide a state of the art report on online or computerized reference services. Libraries were selected from states which had demonstrated leadership in networking, and data were sought in four areas: (1) users of online information, (2) suppliers of those services, (3) training and retraining of searchers, and (4) funding patterns. Of the 192 libraries that responded, 91 offered computerized reference service--35 academic, 16 public, and 40 special libraries. Findings indicate that: (1) the technical-professional community received the most service, followed by graduate students, faculty, and undergraduate students; (2) in decreasing order, Lockheed, the System Development Corporation, and the Bibliographic Retrieval Service were the major vendors; and (3) these vendors trained most of the users, who are primarily the professional staff in all types of libraries, to search online. In the ares of funding patterns, it was found that most academic and public libraries recovered at least partial costs from their clients and fees were rarely charged in special libraries. The questionnaire is appended. Two figures and 22 references are provided. (RBF)

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On-Line Services in Some Academic, Public and Special Libraries

A State-of-the-Art Report

by

Marcy Murphy

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ABSTRACT

A 92% response was received from an intertype questionnaire survey of 309 libraries in 13 states that inquired about on-line reference capabilities. Ninety-one (48%) of the respondents did offer computerized reference service: 35 (49%) of the academic sample, 16 (24%) of the public, and 40 (75%) of the special libraries. Findings indicated that the technical-professional community received the most service, followed by graduate students, faculty and undergraduates. Searches were conducted by librarian intermediaries, rather than end users, in virtually all libraries. Lockheed, SDC and BRS supplied libraries, in that order, and most libraries bought the service direct rather than contracting through networks. These vendors also do most of the training, both initial and advanced, chiefly of professional personnel, who are selected by interest, service orientation, communication skills and subject expertise. Funding patterns indicated that most academic and public libraries recovered at least partial costs from their clients; in special libraries, fees were rarely charged. More special libraries had new funds available to subsidize the searches. There is interest and potential growth in this service sector; however, it may be slowed substantially as grant money, to introduce and demonstrate the systems, dries up.

INTRODUCTION

Purpose

The purpose of this paper is to provide a state-of-the-art report on on-line or computerized reference service in a sample of academic, public and special libraries today. It is based on a preliminary analysis of some of the data collected from a survey of over 200 libraries conducted in the fall of 1979.

Background of the Study

In 1977, Marcel Dekker published the *Handbook of Library Regulations*,[1] coauthored by this writer. It was based on a survey conducted in 1974. The goal of the *Handbook* was to present a report on regulations that were then in effect in libraries in the United States. The book was intended both to document rules in effect and to furnish librarians with the means of comparing and contrasting their own operations with those of others in such areas as loan periods or fine schedules, hours of operation, library borrowers, library collections, and so forth.

In the introductory pages, it was specified that this volume would be limited to a discussion of regulations governing the use of traditional library resources. There would be no attempt to treat those rules which regulated access to and use of computerized information retrieval systems.[2]

This stated limitation attracted the attention of two of the several reviewers of this book. Horn, in *Library Journal*,[3] stated that the authors of the *Handbook* had apparently accepted the necessity of fees for computerized services; Hamilton, in *Special Libraries*,[4] observed that in this day and age it was truly "lamentable" not to include information about access to computerized services in a volume published in 1977. In a letter to the editor of *Special Libraries* in response to the latter review, this writer pointed out that on-line services had been judged important enough by the authors of the *Handbook* to warrant separate and extensive investigative treatment on their own.[5] It was also true that at the time of the *Handbook* survey, in 1974, very few libraries had on-line reference capability.

These comments reinforced the perceived need for further investigation, and plans went ahead for the subsequent survey of on-line search services, with the result that a contract was signed to produce volume two of the *Handbook*, tentatively entitled *Handbook of Library Regulations, Access to On-Line Services* (vol. 2). Its chief goal is to provide a state-of-the-art report on regulations governing client access to computerized information services in libraries and information centers. Objectives are to identify library users who query the on-line information systems, directly or indirectly, to identify these systems and their vendors, to explore funding patterns, to examine new policies and procedures that have resulted, to investigate programs for training and retraining staff and clientele, and to evaluate performance.

OCLC terminals are increasingly available in library public service areas for client use. However, they do not provide for subject retrieval and are still infrequently accessed by the public, except in large research libraries. While it is certainly possible to arrange for a trainer or user mode that does not permit changes, at the time this survey was conducted (and to a large extent since), OCLC was chiefly used as a cooperative cataloging aid and a union list, into which data could be added, deleted or modified by the terminal operator. Martin distinguished between those networks "used only for information retrieval and those used for input and modification of data as well as for retrieval." For reasons of economy, this survey was limited to address[6] the former type of networks, those *used for information retrieval only*. This paper will present some of the preliminary data reported in four areas: (1) users of on-line information services, (2) suppli-

ers of those services, (3) training and retraining of searchers, and (4) funding patterns.

METHODOLOGY

The Sample

To gather the data, a survey was conducted of a sample of academic, public and special librarians. To keep the number of respondents and questionnaires manageable, the decision was made to limit the study to libraries in 13 states representing different areas of the nation that have demonstrated leadership in networking. This decision was based on the assumption that involvement in some aspects of computerized processing (chiefly shared cataloging and union lists) typically offered through networks might create an environment more receptive to introducing on-line information services to the library's clientele. States selected were: California, Colorado, Georgia, Illinois, Indiana, Massachusetts, Michigan, Minnesota, New York, Ohio, Pennsylvania, Texas, and Washington. This is by no means intended to be a definitive list. Highly interesting and important events in library development and technology are not limited by geography, and in optimum circumstances, a sample drawn from all states would have been preferable. However, one must deal with the possible.

After the states had been determined, samples of academic, public and special libraries from each were chosen. For the academic population, six institutions were selected from each state: the two largest, based on enrollment, from the three categories of universities, four-year colleges, and two-year junior colleges. These institutions were identified in *Library Statistics of Colleges and Universities, Fall 1973 Institutional Data (part B)*, published in 1976 by the National Center for Education Statistics (NCES).[7]

Public libraries were tagged in *Statistics of Public Libraries Serving Areas with at Least 25,000 Inhabitants, 1968*.[8] As in the case of the academic libraries, three groupings of public libraries were established: those serving constituencies of 25,000-149,999 (small); 150,000-249,999 (medium); and over 250,000 (large). Wherever possible, two libraries were selected in each group. However, if there were only one "large" library in a state, for example, then the three largest were selected from the "medium" group, and so on. With one exception, each state was therefore represented by six public libraries of differing sizes. Since Georgia had been a nonrespondent in the 1968 *Statistics of Public Libraries* survey, no public libraries from

Georgia were included in this sample. There were some adjustments made in both the academic and public library samples subsequently, so that finally 77 academic and 73 public libraries were included in the survey.

The special library sample was chosen from the 1978 annual directory issue of *Special Libraries*.[9] Three officials from appropriate geographical SLA chapters were selected for inclusion in the survey, but the process was not entirely clean because of the curious evolution and naming of special library chapters. While some states (Minnesota, for example) have one statewide organization, plainly labeled, other states (such as New York, California and Pennsylvania) have numerous chapters in cities or areas. In still other cases, chapters have ambiguous names, such as "Heart of America." Where there was doubt, an inclusive rather than exclusive policy was followed, and 59 officials of special library chapters received questionnaires. Officials of SLA chapters who were also academic librarians were excluded, unless they were medical or law librarians. The total sample numbered 209.

The Instrument

The survey instrument was a five-page questionnaire of 50 questions. The questions taken from that questionnaire that constitute the basis for this report are listed in the appendix.

This writer acknowledges with gratitude her special debt to two publications in particular: *Librarians and On-Line Services* (1977)[10] and *On-Line Impact Study: Survey Report of On-Line Users, 1974-75* (1975).[11] A taxonomy for the proposed book and the questionnaire drew upon both of these sources. However, the many possible questions about *impact*, real or imputed, of on-line services on users, staff and policy have been deliberately omitted from this study and reserved for a future project. On-line searchers in libraries and instructors in library schools in the Michigan area were kind enough to review and critique the first draft of the questionnaire, which was then modified to include their recommendations.

The final draft was mailed in fall 1979. It was entitled "Questionnaire: On-Line Information Services for Library's Public." This statement directly followed the title:

> This questionnaire is addressed only to those libraries and information centers that have On-Line Searching Capabilities as a part of their *REFERENCE SERVICE TO THE PUBLIC*. Systems that provide only on-line shared cataloging and union lists are excluded from this study.

This attempt to define scope and purpose initially was not entirely successful in that, in spite of the attempt to exclude on-line cataloging systems, some libraries nevertheless mailed back reports on OCLC; also, several special librarians carefully noted that in no way did they serve the "public," referring back to the title of the questionnaire. However, the instrument seemed to be free of any other major ambiguities.

FINDINGS

Returns

A total of 209 questionnaires was sent; 192 or 92% were returned (see table 1). This high rate of return can probably be judged a measure of the high rate of interest in on-line searching today. However, 101 (or 53%) of the 192 libraries that responded indicated, by checking the first question, that they did not have on-line in house, but referred all requests for searches to other institutions or locations (see table 2).

TABLE 1
RETURNS OF THE SURVEY

	Academic	*Public*	*Special*	*Totals*
Questionnaires sent	77	75	59	209
Questionnaires returned	72	67	53	192
Percent return	94	92	90	92

TABLE 2
NUMBER OF RESPONDENTS NOT PROVIDING ON-LINE SEARCHES

	Academic	*Public*	*Special*	*Totals*
Questionnaires returned	72	67	53	192
Libraries without on-line capability	37	51	13	101
Percent without on-line capability	51	76	25	53
Libraries with on-line capability	35	16	40	91
Percent with on-line capability	49	24	75	47

Slightly less than half the respondents (47%) had computerized reference searching available as an option. The responses were also interesting in that they confirmed what one might assume—that special libraries not only had initiated on-line service but continued to maintain a strong lead in providing it. Seventy five percent of the special libraries provided in-house searches, 26% more than any other type of library.

Forty-nine percent of the academic libraries responding ran on-line searches. However, only about one-fourth (24%) of the public libraries offered computerized reference service. If interest were the only yardstick, the percentage of public libraries adopting on-line might rise rapidly in the near future. But the current financial picture limits desirable development and restricts growth. According to Keith Doms, director of the Free Library of Philadelphia, fiscal concerns constitute the greatest barrier to free public library participation in the entire area of electronic communications. Doms foresees no major involvement by public libraries in the next decade unless higher levels of government share their wealth.[12]

Finally, 91 libraries (35 academic, 16 public and 40 special) in the 13 states reported on-line searching capability available in-house, and the following report is based upon data they provided. It should be noted that not all respondents answered all questions.

Users

Who is eligible to request on-line searches? The library's user constituency only, or anyone who walks in? For this, as for other answers, not all respondents answered the questions.

Eight academic libraries restricted searches to their constituencies only, but 24 provided them for anyone who walked in. Respondents made several comments that further delimited this service. Two noted that their constituencies included all citizens of the state. One library served several academic communities. Another commented that a very small percentage of the potential university community used the service, and that while the percentage of library users that made requests was higher, it was still small. Still another noted that a deposit was required. One library provided free searches for "insiders," but charged "outsiders."

Three public libraries restricted services, but 12 provided them to anyone. Users could call, write or come in; often they did not need to be registered borrowers, but did have to demonstrate "serious need for the information."

A "quota system" was in effect at one public library; whether this system was for users or searches was not specified.

As might be expected, in the majority (31) of the special libraries, search service is available to the library's users only. Six libraries reported that they served anyone who walked in.

Respondents were asked to indicate the types of clients for whom searches had been performed. Responses are charted in figure 1. Apparently, the "technical professional community" receives the best service. Seventy libraries had run searches for them: 32 special, 25 academic and 13 public. "Graduate students" had utilized computerized searching in 51 libraries; 31 academic, 13 public and 7 special, and represent the population second best served. "Faculty" searches had been run in 46 libraries: 33 academic, 8 public and 5 special. "Undergraduates" had used the systems just slightly less than faculty, in 42 libraries: 30 academic, 7 public and 5 special. Eleven libraries reported serving high school students: six public, four academic and one special. This is the one type of user that public libraries served more frequently than academic or special. It seems very likely that high school students would make more and better use of the search services were they more widely available, especially in view of the fact that school personnel, judging from this survey, seem increasingly aware of the usefulness of on-line searches. It would seem feasible to sponsor programs, perhaps jointly funded by school and public library systems, to test this potential market.

Some additional comments made by respondents indicated that local and regional government planning agencies used academic library searching services regularly. Usage was also recorded in academic libraries by local school district administrators and teachers. One academic library regularly provided searches for patrons of the public libraries in its area, apparently a formalized referral arrangement.

When asked what percentage of their regular clientele had been assisted by on-line searching, the majority of academic (29) and public (12) librarians said that use of the systems was probably represented by 1-10% of their regular clients. However, one public and four academic libraries indicated that 10-25% of their users had requested searches, and one public library reported usage in the 25-50% bracket.

Special librarians had a distinctive profile that indicated higher usage across the board. Nine reported that over 50% of their users had requested search services; 7 reported 25-50%, and 13 noted that 10-25% of their clien-

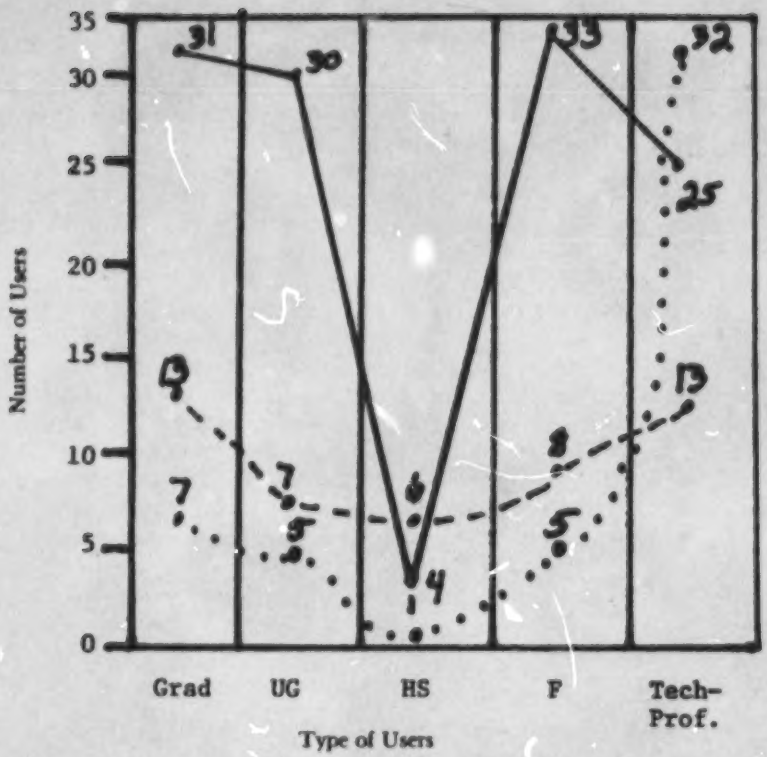

Fig. 1. Types of Users (Graduate Students, Undergraduates, High School, Faculty, Technical-Professional Communities) Served in Sample Libraries

tele had benefited from on-line searches. Eight special libraries reported usage in the 1-10% bracket (see table 3).

Most academic libraries (24) always required users to fill out pre-search forms; about half the special libraries (20) never required this. Table 4 reports returns on the question that asked respondents to indicate patrons' use of preliminary search forms.

TABLE 3
ESTIMATED PERCENTAGE OF CLIENTELE SERVED ON-LINE

Type of Library	*1-10%*	*10-25%*	*25-50%*	*Over 50%*
Academic	29	4	-	-
Public	12	1	1	-
Special	8	13	7	9

TABLE 4
NUMBER OF LIBRARIES REQUIRING PRE-SEARCH FORMS

Type of Library	*Always*	*Sometimes*	*Never*	*Other*
Academic	24	6	3	1
Public	6	4	5	1
Special	8	8	20	3

However, there was a refreshing uniformity of practice in respect to having the patron present during the search while the specialist is at the terminal. A majority of all the libraries had the user present sometimes (22 academic, 9 public and 34 special). Only eight libraries, all academic, required the users to be there always, while three academic, six public and four special never had clients present.

Vendors and Types of Files

Librarians were asked which major vendors supplied their services: Bibliographic Retrieval Service (BRS), Lockheed, System Development Corporation (SDC) and "other." Lockheed led across the board, and supplied 29 academic, 11 public and 34 special libraries in the sample. SDC was second, contracting with 22 academic, 10 public and 24 special agencies. BRS supplied 18 academic, 3 public and 9 special libraries. The "other" category—in this case one is tempted to call it the "significant other"—was checked by numerous respondents (17 academic, 11 public and 28 special) and reported the library's direct access to data bases. The Information Bank and Medline were repeatedly cited, as were RECON, WLN, and RLIN.

Most of the libraries today also buy their on-line information service direct, either from the vendors listed above or the original data base managers, rather than contracting through networks or consortium intermediaries

(22 academic, 9 public and 32 special). A few (six academic, five public and two special) do utilize intermediaries. NYSILL, New York State Library, CLASS, AMIGOS, MIDLNET, LEXIS/NAARS through EDUCOM, BCR, and the University of Colorado Medical Library were cited.

Not one academic or public library utilized the services of a commercial searching service or one individual information broker, nor did the majority (29) of special libraries. However, 11 special libraries do buy searches rather than make them—or perhaps in addition to making them.

At the 1979 American Library Association conference in Dallas, Carlos Cuadra, speaking on the subject of futures, predicted the growth of nonbibliographic data bases as one of four "obvious" trends in the field, noting that of approximately 275 on-line data bases then available, around 150 were nonbibliographic. He said also that nonbibliographic data bases were chiefly used outside libraries at the present time and distinguished four types: (1) numerical and statistical data, (2) facts or answers, (3) chemical or physical properties, and (4) full text. Present-day availability of nonbibliographic data bases seemed an interesting area to explore, and libraries surveyed were asked if they "provided access to any nonbibliographical or referral or substantive data bases (different terms for the same thing)." The four types listed by Cuadra were presented as choices. Forty-five of the 91 respondents with on-line capability reported none of these available: 20 academic, 6 public and 19 special. However, nine numerical or statistical files were reported by academic libraries, 6 by public and 12 by special libraries. Two fact or answer data bases were available in academic libraries, three in public and seven in special libraries. Two chemical and physical properties on-line were provided by academic libraries and 13 by special. Full text was accessed by one academic and one special library.

TABLE 5
NONBIBLIOGRAPHICAL DATA BASES AVAILABLE IN LIBRARIES

Nonbibliographic Data Bases Available	*Academic*	*Public*	*Special*	*Totals*
Numerical and/or statistical	9	6	12	27
Facts or answers	2	3	7	12
Chemical or physical	2	-	13	15
Full text	1	-	1	2
Other	1	2	1	4
Total				60

Special libraries reported the highest incidence of nonbibliographic data bases. Now that more librarians are being trained in their use, we may expect to see more of these files in libraries in the near future, as well as other more specialized data bases that deal with the problems of everyday life, such as consumer affairs, day-care centers, legal aid, health and social services.[13]

Training

Williams identified four types of data bases; (1) discipline-oriented (Chemical Abstracts, Psychological Abstracts, MEDLARS); (2) mission-oriented (Nuclear Science Abstracts, STAR [Scientific and Technical Aerospace Reports]); (3) problem-oriented (HEEP) [Abstracts of Health Effects of Environmental Pollutants], PIP [Pollution Information Project]); and (4) interdisciplinary or multidisciplinary (CBAC [Chemical and Biological Activities, Science Citation Index]).[14] Information specialists today need to be educated to understand, first, what resources exist—hard copy, machine-readable or micrographic in form; and second, either how to refer questions received to another agency or how to translate user needs into search questions and to conduct the search themselves.[15]

Caruso distinguishes between "intermediaries" and "end users"—those specialists who have developed expertise in stating questions in appropriate thesaurus term, and those individuals who personally experience information needs.[16] The greatest possible use of systems can be obtained by teaching intermediaries, but she encourages developing a varied pool of both types of searchers. Training end users is, to Caruso, the more demanding task.[17] However, Wanger believes that for educational purposes, it is not useful and may even be counterproductive to characterize users in terms of end users versus intermediaries, because within any one training group, the differences between individuals may be as great as differences between groups.[18] Whatever the ultimate philosophical or pedagogical veracities, these two types of users (end users and intermediaries) have generally been acknowledged in educational programs, and the respondents of this survey were asked to comment on both. The intermediary group was further divided to distinguish professionally trained searchers from other nonprofessional staff.

Who is trained to search on-line? "Professional staff" overwhelmingly, in all types of libraries—31 academic, 14 public and 39 special. In 7 academic and 2 public libraries, "support staff" were also trained; however, both a larger number, 13, and a larger percentage, 33%, of special libraries trained support searchers. Few users were taught to operate the systems (see table

6). Judging from these data, searching seems to be considered predominantly a professional task, probably in the same vein as answering reference questions by other means.

TABLE 6
TYPES OF USERS TRAINED TO SEARCH ON-LINE

Users	*Academic*	*Public*	*Special*
Librarians	31	14	39
Users	2	1	1
Support staff	7	2	13
Other	-	-	-

When libraries go on-line, decisions must also be made about how many personnel in public service will conduct searches. Should computerized reference be the province of just one specially trained librarian? Should all reference personnel conduct searches? Or should responsibility fall somewhere between these two extremes? In 21 academic libraries, "some"—not just one and not all—reference and branch librarians are now searching. In four academic libraries, "just one" reference librarian searched, and in five, "all" librarians were responsible. Four public librarians trained one of their reference librarians; four trained some; only one trained all. However, in special libraries, 14, the highest number, trained all reference professionals; 13 trained only one; 5 trained some. Eight marked the "other" category and commented that all librarians, but in only one subject department, searched; or that special job titles existed for searchers; or that certain exceptions or combinations of staff were in effect, sometimes on a trial basis (see table 7).

TABLE 7
NUMBER OF LIBRARIANS RESPONSIBLE FOR SEARCHING ON-LINE

Librarians	*Academic*	*Public*	*Special*
One reference and/or branch librarian	4	4	13
All reference and/or branch librarians	5	1	14
Some reference and/or branch librarians	21	4	5
Other	3	5	8

Another important decision which managers must face is selection of personnel. What are the personal criteria to be used in selecting librarians for retraining in system searches? Several traits have been suggested, and the following were adapted from earlier studies for purposes of this survey: communications skills, service orientation, subject expertise, automation or computer experience, previous use of systems, only staff available, and personal interest. Respondents were asked to check these reasons. More than one choice was obviously possible.

In the academic sector, interest was the principal self-selecting agent (26), followed by service orientation (17) and subject expertise (17). In reverse order, subject expertise (9), service orientation (7), and interest (5) were the chief selection factors in public libraries. Special librarians were chosen for communication skills (25), service orientation (21), and subject expertise (19). Previous use of systems (13) and interest (13) were also noted as important criteria in this group. It was interesting to note that neither general knowledge of automated or computerized systems nor specific earlier experience with searching seemed to be particularly important criteria in the selection of academic and public searchers; both factors were given considerably more weight by special librarians (see table 8).

TABLE 8
CRITERIA FOR SELECTING SEARCHERS

Criteria	*Academic*	*Public*	*Special*
Communication skills	11	4	25
Service orientation	17	7	21
Subject expertise	17	9	19
Automation or computer experience	-	-	8
Previous use of systems	6	1	13
Only staff available	7	-	8
Interest	26	5	13
Other	4	2	8

How were the librarians trained initially? The largest number received instruction from vendors: 30 academic, 12 public and 33 special. The next largest group was tutored by colleagues: 19 academic, 5 public and 13 special. Several were self-taught: 9 academic, 2 public and 9 special. Library schools accounted for a small percentage of training. In formal credit courses, one academic, two public and six special librarians learned to search. In workshops sponsored by the library schools, 14 respondents

were instructed: 6 academic, 2 public and 6 special. One academic and seven special librarians trained on the National Library of Medicine's MEDLEARN, a computer-aided instruction program (see table 9).

TABLE 9
METHODS OF INITIAL TRAINING FOR LIBRARIANS

Method	*Academic*	*Public*	*Special*
Self-taught	9	2	9
Tutored	19	5	13
MEDLEARN	1	-	7
Instruction from vendors	30	12	33
Library school credit course	1	2	6
Library school workshop	6	2	6
Other	4	3	4

Advanced training is also chiefly conducted by the vendors. Twenty-six academic, 12 public and 36 special librarians received their formal training from this source, as contrasted with formal instruction in library schools, where 1 academic, 2 public and 5 special librarians were enrolled. Informal advanced training (reading, newsletters) was also a popular means of gaining additional knowledge. Sixty-one librarians went the informal route: 23 academic, 7 public and 31 special. The library schools are apparently either not providing or are not considered the most credible sources for the initial and ongoing education that is essential for high performance in this growing service area (see table 10).

TABLE 10
METHODS OF ADVANCED TRAINING FOR LIBRARIANS

Method	*Academic*	*Public*	*Special*
Informal	23	7	31
Formal (vendors)	26	12	36
Formal (library schools)	1	2	5
Other	10	2	10

Respondents noted also that advanced instruction was often provided by local or state on-line users groups. Sometimes tutoring sessions were also

set up with trained colleagues. Additional on-line sessions were occasionally scheduled at library conventions. Teaching additional necessary skills and strategies seems today to be grassroots in its planning, idiosyncratic, and unsystematic. This local approach can translate either into carefully tailored programs that meet well-defined needs, or into "catch-as-catch-can" sessions put together quickly when the opportunity presents itself.

End users, in most of the sample libraries, were not trained. Sixty-seven respondents "never trained clients:" 24 academic, 12 public and 31 special. Users are "sometimes" trained in seven special and three academic institutions; only five libraries "always" teach their patrons to search: two academic, two public and one special. Judging from this survey, the vast majority of librarians (or intermediaries) are themselves conducting the computerized searches. If the day of the end user is truly coming, it has yet to dawn on this population.

In summary, reference and branch professionals in all three library sectors are trained to search. Chances of being directly involved in this activity are highest in a special library, where nonprofessional staff also conduct searches. Interest, attitude and subject expertise seem chiefly to determine which librarians will learn computerized reference. This group then receives the necessary training from vendors, professional associations and groups, and more accomplished colleagues, rather than from library schools, both initially and on a continuing basis.

Funding

Whatever the reasons may be, and an in-depth exploration of this topic seems substantially overdue, librarians in general have been willing to absorb the additional costs of on-line cataloging and other processing in their technical services units, but when it comes to funding on-line information for their clientele in public service areas, no such consensus is apparent. Indeed, there is a pronounced reversal, especially in academic and in some public library philosophy, in which some cost recovery passed on to the user seems to be the rule rather than the exception. A rationale for this dichotomy has not been addressed, leaving a question in the minds of some about managerial policies that willingly shoulder substantial costs that provide direct electronic benefits for library processing but not for library users. However, this cost-recovery philosophy did not carry over into special librarianship in this survey. Frequently, indeed characteristically, no additional fees were charged special library users; on-line searching charges were most often provided from newly allocated or added library funds. When asked if their users were charged for direct on-line

costs, 29 academic libraries said they were; 3 said they were not. Ten public libraries charged direct costs; four did not. However, while 15 special libraries did collect, 24—the largest number—did not.

Only a few libraries reported additional fees, beyond direct costs, charging for overhead or staff. Write-in comments noted that time constraints were considered a cost factor in some instances; for example, additional charges could be imposed if formulating a search strategy exceeded ten minutes. Other librarians noted a policy of adding certain percentage increments to the direct charges users paid in order to underwrite the cost of supplies and training manuals. One library imposed a flat fee of $5 per search. Another charged "outsiders" but not "insiders."

Academic libraries funded searches chiefly by means of reallocations, charged back to individuals and departments. New funding was the exception rather than the rule. In addition to tapping new funds, several special libraries also charged costs back to the departments. Some respondents also noted the incidence of special funding for an initial (often two-year) period, after which it was understood that either the general library fund would support searches or other monies would have to be found. In other instances, searches were supported by Library Services and Construction Act (LSCA) grants (see table 11).

TABLE 11
FUNDING SOURCES FOR ON-LINE SEARCHES

Source	*Academic*	*Public*	*Special*
New funds	6	4	24
Reallocation, with some charged back to			
Institutions	7	3	2
Departments	16	1	11
Individual	24	6	5
Other	5	6	3

Most of the surveyed libraries took a middle ground and attempted to recover "some costs:" 21 academic, 9 public and 17 special. On the other hand, 17 special libraries, a precisely equal number, recovered "no costs." Only two academic and three public libraries were in this group. Eight academic, 2 public and 5 special libraries tried to recover "all costs," and 11 special libraries tried to make a "small profit."

Several libraries indicated that more than one cost-recovery policy was in effect, and the policy used was based on the type of user requesting a search. This accounts for discrepancy in totals, i.e., 40 special libraries provide on-line searches, but 50 cost-recovery policies are indicated in table 12.

TABLE 12
COST RECOVERY POLICIES

Policies	*Academic*	*Public*	*Special*
No costs	2	3	17
Some costs	21	9	17
All costs	8	2	5
Small profit	1	-	11

In academia, fee schedules are typically in effect, and they are usually based on the cost of the data base accessed and the amount of printout required. Sixteen academic libraries adopted this policy, as did six public and seven special libraries. A high degree of acceptance of fees in academic libraries has been postulated,[19] and certainly this response supports that assumption. Most special library respondents reported that they did not have any fee schedule in effect at all.

It will be important to check in the near future to see if and/or to what extent printed abstracting and indexing tools are canceled as a result of library adoption of on-line modes. If such cancellations do typically take place, the costs of on-line searching will almost certainly escalate, as abstracting and indexing producers attempt to recover their investments.[20] At least one empirical study has indicated that at the present time, a cost comparison of on-line and manual searching has been favorable to on-line.[21] However, it is not difficult to predict that librarians will attempt to get by with one form of indexing access rather than two as a basic cost-effective measure, and the on-line alternative is more powerful, all else being equal. Charging users for computerized information seems to be an area in which there exists considerable agreement, but very little systematic rationale; high feelings and convictions on both sides of the question, but little evidence or philosophical justification to support either stand.

CONCLUSIONS

Not quite half the libraries in this survey offered on-line capability in 1979. It seems very likely that there will be a period of growth ahead, and facts and answers forthcoming, both philosophical and pragmatic, that are presently lacking. Expansion may be somewhat slowed, however, because grant money is rarely available today to fund initial introductory periods in which users of both types are introduced to systems. The conflict with habit will probably also remain an obstacle to wider use (although not a serious one), as will the fact that there are not enough types of data bases presently available on-line to tempt many potential users. Reduced cost, continuing publicity and orientation will be required on a continuing basis.[22] There seems no doubt, however, that computerized information management is a major growth sector in libraries and information centers.

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APPENDIX

Questions Used in this Paper from the *On-Line Information Services* questionnaire of 1979

4. Who is eligible to conduct on-line searches:
   a. The library's user constituency only ____ b. Anyone who walks in ____
   c. Other ____

5. To date, for which type or types of patrons have on-line searches been performed:
   a. Students: 1. Graduate ____ 2. Undergraduate ____ 3. High school, etc. ____
   b. Faculty ____
   c. Technical/professional community (scientists, doctors, business men, etc.) ____
   d. Other ____

6. What percent of your regular clientele has been assisted by on-line searching:
   a. 1-10% ____ b. 10-25% ____ c. 25-50% ____ d. Over 50% ____

9. Do users fill out a pre-search form:
   a. Always ____ b. Sometimes ____ c. Never ____ d. Other ____

11. Which vendors supply your library:
   a. BRS ____ b. Lockheed ____ c. SDC ____ d. Other ____

12. Do you buy service direct from a vendor and/or through a network/consortium intermediary:
   a. Direct ____ b. Intermediary (please specify) ____

24. Does your library provide access to any *non-bibliographical*, or referral, or substantive data bases (different terms for the same thing):
   a. No ____ b. Yes, and they supply: 1) numerical and statistical data ____ 2) facts or answers ____ 3) Chemical or physical properties ____ 4) Full text ____ 5) Other ____

25. Does your library ever buy the services of a commercial information firm, or individual information broker:
   a. No ____ b. Yes (please specify name of firm or individual) ____

27. Who is trained to search on-line:
   a. Librarians ____ b. Users ____ c. Support staff ____ d. Other ____

28. On the library staff, who is responsible for searching on-line:
   a. one reference librarian or information specialist ____ b. all reference and/or branch departmental librarians ____ c. some reference and branch librarians ____ d. Other ____

29. Why are librarians selected to become searchers:
   a. Communication skills ____ b. Service orientation ____ c. Subject expertise ____ d. Automation or computer experts ____ e. Previous use of systems ____ f. Only staff available at time ____ g. Interest ____ h. Other ____

35. How are librarians trained *initially*:
a. Self-taught, from manuals ____ b. Tutored by a trained colleague ____ c. MEDLEARN, through National Library of Medicine ____ d. Formal instruction for vendors ____ e. Formal instruction from library schools in regular credit courses ____ f. Formal instruction from library schools in workshops, etc. ____ g. Other ____

36. Is advanced training of staff conducted by:
a. Informal means, reading, newsletters, etc. ____ b. Formal training by vendors ____ c. Formal training by means of library schools ____ d. Other ____

37. Are users trained to search on-line:
a. Always ____ b. Sometimes ____ c. Never ____ d. Other ____

39. Does the library fund on-line services with:
a. New funds ____ b. Reallocated funds, with some or all costs charged back to: 1) Institutions ____ 2) Departments ____ 3) Individuals ____ 4) Other ____

40. The library attempts to recover:
a. No costs ____ b. Some costs ____ c. All costs ____ d. A small profit ____

41. Does your library charge the user for direct costs (connect time, communications time, offline printing): yes ____ no ____

42. Does your library charge users for these additional costs (check if appropriate):
a. Prorated costs for terminal ____ b. Prorated costs for subscription to services ____ c. Overhead (utilities and space) ____ d. Staff time ____ e. Other ____

43. The fee schedule is: a. No fees ____ b. Flat rate for everyone ____ c. Both "standard" search rate and a "custom" search rate ____ d. A differential fee for "outsiders" ____ e. A fee according to data base searched and number of printouts wanted ____ e. Other ____

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